Amendments to the Specification:

Please replace the Title, beginning at page 1, line 3, with the following redlined Title:

JUVENILE HORMONE ACID METHYLTRANSFERASE~~TRANSMETHYLASE~~ GENES AND METHODS OF USING THE SAME

Please replace the paragraph (or section) beginning at page 12, line 16, with the following redlined paragraph (or section):

The present invention comprises proteins that comprise the amino acid sequence of a juvenile hormone acid methyltransferase of *Bombyx mori*, *Drosophila melanogaster*, *Anopheles gambiae*, *Spodoptera litura*, or *Helicoverpa armigera* with one or more amino acids mutated, and that are functionally equivalent to that protein. Such amino acid mutations occur in nature. The number of mutated amino acids varies depending on the sites of addition, deletion, or substitution of amino acid residues within a juvenile hormone acid methyltransferase protein, or the types ~~oils~~ of amino acid residue. The number of mutated amino acids is preferably 30 or less, more preferably 2 to 20, and more preferably about 2 to 15 amino acids.

Please replace the paragraph (or section) beginning at page 34, line 10, with the following redlined paragraph (or section):

Fig. 1 is a diagram showing an enzyme reaction between enzymes of the present invention and juvenile hormone and its precursor acid, found in insects and crustaceans . JHAMT indicates the juvenile hormone acid methyltransferase, AdoMet indicates S-adenosyl methionine, and AdoHcy indicates S-adenosyl homocysteine. R_1 and R_2 in the juvenile hormone acid are: R_1= C_2H_5~~CH_3~~ and R_2= C_2H_5~~CH_3~~ in JH I acid; R_1= C_2H_5~~CH_3~~ and R_2= CH_3~~H~~ in JH II acid; and R_1= CH_3~~H~~ and R_2= CH_3~~H~~ in JH III acid. R_1 and R_2 in the juvenile hormone are: R_1= C_2H_5~~CH_3~~ and R_2= C_2H_5~~CH_3~~ in JH I; R_1= C_2H_5~~CH_3~~ and R_2= CH_3~~H~~ in JH II; and R_1= CH_3~~H~~ and R_2= CH_3~~H~~ in JH III.

Please replace the paragraph (or section) beginning at page 34, line 30, with the following redlined paragraph (or section):

Fig. 4 is a diagram showing the enzyme activities of the recombinant proteins of the present invention. "S" indicates a standard juvenile hormone substance. "J" indicates a reaction product obtained by the action of recombinant juvenile hormone acid methyltransferase from *Bombyx mori* on either one of JH III acid (a), JH II acid (b), JH I ~~III~~ acid (c), or farnesoic acid (d) with S-adenosyl methionine as a substrate. Juvenile

hormones corresponding to each substrate, that is, JH III (a), JH II (b), JH I ~~II~~ (c) or methyl farnesoate (d), are confirmed to be produced. "C" is a reaction product of the case where no enzyme is added to the reaction solution comprising the same substrates as in "J". No juvenile hormone is produced.